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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/937,099

09/20/2001

Makoto Hasegawa

TAKIT 162

4362

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7590

12/29/2003

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EXAMINER

SCHWARTZ, PAMELA R

ART UNIT

PAPER NUMBER

1774

DATE MAILED: 12/29/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/937,099

Applicant(s)

HASEGAWA ET AL.

Examiner

Pamela R. Schwartz

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-6 and 8-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-6 and 8-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

1. Prosecution is hereby reopened and the indication of allowable subject matter in the last office action is withdrawn in view of the following grounds of rejection.

2. Claims 2-5 and 8-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "coating and/or introducing an additive on the surface or interior of a sheet substrate" is confusing because coating must be performed on the exterior of a sheet and introducing the additive to the surface of the sheet is the same as coating. The examiner suggests language such as "coating an additive on the surface of a sheet substrate or introducing the additive to the interior of the sheet substrate" as clearer.

In claim 2, it would appear that the cross-linking agent is part of the cationic resin reaction product. The claim states "the resin is obtained by the reaction of at least a secondary amine, an ammonia, an epihalohydrin and a cross-linking agent." Yet claim 15 states that "the additive is cross-linked" as if the resin of the independent claim has not been cross-linked. Is this cross-linking referred to in claim 15 cross-linking of the agent of claim 2? Claim 15 would lead one to believe that applicants intend for the cross-linking agent of claim 2 to be unreacted as claimed therein. Consequently, the claims other than claim 15 will be treated as if cross-linking has not occurred.

Also in claim 2, the phrase "the additive comprises a cationic resin as a principle component" is confusing because: 1) an additive is usually a single component, 2) it is unclear in what sense the resin is intended to be "principle" (in weight, volume, effect?),

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and 3) there is no indication that something other than the principle component is present in the additive.

In claim 3, it is unclear what "sheet-like" might be intended to refer to other than a sheet. In addition, it is unclear how a layer intended to absorb ink, an ink absorption layer can be claimed as having poor ink absorption properties. Wouldn't that make the layer unsuitable as an ink absorption layer?

3. Claims 2-5 and 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo et al. (6,277,498). Endo et al. disclose an ink jet recording medium comprising a support and an ink receiving layer thereon. The coating may contain a cationic resin which may be a polydimethylamineammonium epichlorohydrin see col. 10, line 37 to col. 11, line 10). The coating composition may also include a cross-linking agent (see col. 11, lines 60-67). The support may be paper or may be resin (see col. 12, lines 1-40); therefore, the coated additive will impregnate the support, if paper, or be contained in a layer on its surface, if resin or resin-coated paper.

Claim 6 is directed to a method of formation, however, it is unclear if this method of making renders the article structurally distinct from one in which a paper support is impregnated with the additive using a conventional coating technique set forth in column 15 of the reference. Therefore, rejection of claim 6 is proper. It would have been obvious to one of ordinary skill in the art to cross-link the ink receiving layer of the reference, because inclusion of a cross-linking agent in the layer is contemplated by the reference, and to utilize the materials disclosed to form an ink receiving layer as disclosed therein.

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The reference does not disclose the cross-linking agents of claims 10, 11 and 14, however, all of these cross-linking agents are well-known in the art. It would have been obvious to one of ordinary skill in the art to utilize an effective cross-linking agent from those commercially available because the reference specifically recites that such agents may be present.

4. Claims 2-6 and 8, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (6,150,289). One embodiment of the reference is to provide a coating composition for base stock to produce matte grade ink jet printing paper (see col. 8, lines 28-33). The reference also discloses inclusion of a cationic polymer which may be a branched polymer derived from the condensation reaction product of dimethylamine, epichlorohydrin, and ammonia. The molecular weight of one appropriate polymer is 100,000 which would have led one of ordinary skill in the art to utilize polymers within the same range of molecular weight (see col 6, lines 60-67). Therefore, the utilizing materials with molecular weights within the instantly claimed range would have been obvious to one of ordinary skill in the art. The final coating may contain a cross-linking agent (see col. 9, lines 11-58). If a paper support is used, the coating composition will impregnate the support. Claim 6 is directed to a method of formation, however, it is unclear if this method of making renders the article structurally distinct from one in which a paper support is impregnated with the additive using a conventional coating technique set forth in column 11, lines 1-4 of the reference. Therefore, rejection of claim 6 is proper. It would have been obvious to one of ordinary skill in the art to cross-link the ink receiving layer of the reference, because inclusion of

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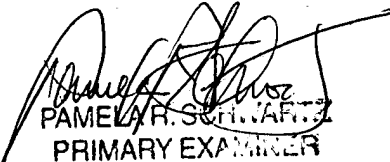
a cross-linking agent in the layer is contemplated by the reference, and to utilize the materials disclosed to form an ink receiving layer as disclosed therein.

5. Prior arguments are moot in view of the new grounds of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pamela R. Schwartz whose telephone number is 703-308-2424 ((571) 272-1528 as of 12/31/03). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on (703) 308-0449 ((571) 272-1526 as of 12/31/03). The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

PRSchwartz
December 21, 2003



PAMELA R. SCHWARTZ
PRIMARY EXAMINER